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STANDLEY & GILCREST LLP
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EXAMINER

YILDIRIM, BEKIR L

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1764

DATE MAILED: 07/30/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/027,677

Applicant(s)

ETTER, ROGER G.

Examiner

Bekir L. YILDIRIM

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 6-20 and 24-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 21-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 & 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This claim recites all possible variables involved in a delayed coking process, without reciting in what fashion or within what metes and bounds each variable is "controlled". The claim therefore equivalent to further limiting nothing.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

Art Unit: 1764

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1-5, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyers (USP 3917564) in view of the conventional knowledge in the art and further in view of Yan (USP 4,096,097) and Block et al. (USP 5,007,987).

Meyers (USP 3917564) teaches a process for making regular coke, wherein sludges and other organic by-products of industrial and community activity which present difficulties due to the presence of dispersed solids are put to useful purpose upon injection of such by-products diluted with added water to a delayed coker as aqueous quench medium (abstract). The exemplified cokes produced may have VCM of as high as 20% (see examples 3-5).

It is acknowledged that Meyers does not mention spongy character of its coke. It would have been obvious however to one having ordinary skill in the art that, in the absence of Myers disclosing otherwise, the process described therein would be expected to produce regular or "sponge" coke, the normal product of the delayed coking process. See for example the following references for the definition and description of sponge coke:

LeCours et al. (USP6,024,863)col. 5, lines 22-30, 63-68.

Greenwalt (USP 5,259,864), col. 1, lines 35-45.

Ohshol et al. (USP 5,954,949) col. 1, line 65 - col. 2, line 20).

Heck et al. (USP 5,258,115) teaches that sponge coke is a lower quality coke, is the regular product of the coking process and is produced from low quality feedstocks,

having significant amount of asphaltenes, heteroatoms and metals, and that the name "sponge" comes from its porous, sponge-like appearance (col. 1, lines 60-62, col. 2, lines 4-14).

Kapner et al. (USP 4,406,872) col. 1, lines 28-38.

Hsu et al. (USP 4,291,008) col. 3, lines 44-49.

Adams et al. (USP 5,110,448) col. 1, lines 29-40. The reference further teaches the influence of temperature on the type of coke produced (col. 6, lines 50-57).

It is also acknowledged that Meyers does not disclose the maintenance of an asphaltic to thermal coke ratio.

Yan (USP 4, 096,097) teaches a method for producing high quality "sponge coke" or not to make soot coke wherein, it is disclosed that the addition of 0.5 to 20 percent by weight of an oxygen-containing, carbonaceous material which decomposes under coking conditions, to delayed coker fresh and/or recycle feed promotes the formation of sponge coke. The oxygen-containing, carbonaceous additives are selected from comminuted coal and lignite materials such as bagasse, sugar beet waste, sawdust and other cellulosic wastes (see col. 3, lines 30-60). The reference further points out that the asphaltenic feedstocks form pitch and thus the asphaltenic fractions were separated in the prior art (col. 2, lines 4-12, 25-29).

Block et al. also teaches the minimization of asphaltenes in the feedstock as a condition for producing higher quality petroleum coke (col. 3, lines 10-15).

It would have been obvious then to one having ordinary skill in the art to control the asphaltenic coke amount, which is equivalent to maintaining the applicant's

Art Unit: 1764

maintenance of asphaltenic coke/thermal coke ratio, since Yan and Block et al. disclose that higher quality coke is produced by minimizing the asphaltene amount.

With respect to claim 3, the examiner further takes official notice that in any coking process all or some these parameters would be controlled, thus statement of the control of such parameters adds nothing inventive to an otherwise obvious process.

6. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shroeder (USP 3,960,701) or Zse et al. (USP 4,326,853) or Grindstaff et al. (USP 4,369,171) or Schlinger et al. (USP 3,852,047) or Hayashi et al., each in view Yan (USP 4,096,097) and Block et al. (USP 5,007,987).

Shroeder (USP 3,960,701) teaches the conversion of non-coking coals into coking coals, by eliminating or reducing sulfur and oxygen in the coking structure and adding hydrogen, wherein the coke product have VCM content of 10-25 % and the product can be calcined to make metallurgical grade coke (col. 2, lines 19-34, col. 2, line 65 - col. 3, line 2).

Zse et al. (USP 4,326,853) teaches a delayed coking process to make regular petroleum coke, which has a VCM content of 16-30%. (see abstract).

Grindstaff et al. (USP 4,369,171) teaches regular cokes with volatile combustible matter contents of 8.8-21.8 % (Table 1).

Schlinger et al. (USP 3,852,047) teaches an improvement to regular coke making process by delayed coking wherein calcinable regular or "sponge" petroleum coke clusters having VCM of 8-29.5% are formed (Table II, col. 10, lines 55-58).

Hayashi et al. teaches a regular grade, or "sponge" coke having volatile matter content of 8-20 % (see claim 6).

It is also acknowledged that Shroeder (USP 3,960,701) or Zse et al. (USP 4,326,853) or Grindstaff et al. (USP 4,369,171) or Schlinger et al. (USP 3,852,047) or Hayashi et al. do not disclose the maintenance of an asphaltic to thermal coke ratio.

Yan (USP 4, 096,097) teaches a method for producing high quality "sponge coke" or not to make soot coke wherein, it is disclosed that the addition of 0.5 to 20 percent by weight of an oxygen-containing, carbonaceous material which decomposes under coking conditions, to delayed coker fresh and/or recycle feed promotes the formation of sponge coke. The oxygen-containing, carbonaceous additives are selected from comminuted coal and lignite materials such as bagasse, sugar beet waste, sawdust and other cellulosic wastes (see col. 3, lines 30-60). The reference further points out that the asphaltenic feedstocks form pitch and thus the asphaltenic fractions were separated in the prior art (col. 2, lines 4-12, 25-29).

Block et al. also teaches the minimization of asphatenes in the feedstock as a condition for producing higher quality petroleum coke (col. 3, lines 10-15).

It would have been obvious then to one having ordinary skill in the art to control the asphaltenic coke amount, which is equivalent to maintaining the applicant's maintenance of asphaltenic coke/thermal coke ratio, since Yan and Block et al. disclose that higher quality coke is produced by minimizing the ashaltene amount.

With respect to claim 3, the examiner further takes official notice that in any coking process all or some these parameters would be controlled, thus statement of the control of such parameters adds nothing inventive to an otherwise obvious process.

7. Claims 4-5, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shroeder (USP 3,960,701) or Zse et al. (USP 4,326,853) or Grindstaff et al. (USP 4,369,171) or Schlinger et al. (USP 3,852,047) or Hayashi et al., each in view of and Yan (USP 4,096,097) and Block et al. (USP 5,007,987) and further in view of Meyers (USP 3,917,564), Scalliet (USP 6,056,882), Bartilucci et al. (USP 4,874,505), Mallari (USP 4,797,197) and Janssen et al. (USP 4,455,219).

Zse et al. (USP 4,326,853) or Grindstaff et al. (USP 4,369,171), Schlinger et al. (USP 3,852,047), Hayashi et al., Yan (USP 4,096,097) and Block et al. (USP 5,007,987) teachings have been discussed above.

It is acknowledged that none of the Shroeder et al., Zse et al., Schlinger et al., Grindstaff et al. or Hayashi et al. references teach the step of adding thermal or chemical quench.

Meyers (USP 3,917,564) teaches a process for making regular coke, wherein sludges and other organic by-products of industrial and community activity which present difficulties due to the presence of dispersed solids are put to useful purpose upon injection of such by-products diluted with added water to a delayed coker as aqueous quench medium (abstract). The exemplified cokes produced may have VCM of as high as 20% (see examples 3-5).

Scalliet (USP 6,056,882) also teaches the addition of industrial wastes and sludges to coker quench streams of delayed coking vessel (col. 6, lines 37-46).



Bartilucci et al. (USP 4,874,505) teaches a process for making regular cokes wherein high oil content sludges are added during coking cycle while the low oil content sludges are introduced during the quench cycle (see Table 1).

Mallari teaches that the injection of hydrogen gas into the coke drum, is a part of conventional delayed coking operation. The reference further teaches the use of hydrogen injection, in minimizing the coke yield as well as giving the product coke spongy-like appearance. The reference further teaches the control of various process variables, such a desired VCM, coke drum overhead temperature, heater outlet pressure (col. 7, lines 57-60, col. 8, lines 33-47, col. 9, lines 13-35, col. 11, lines 19-35, col. 13, lines 8-13). The reference further teaches the employment of an interim drum called the "flasher Drum" which replaces the vapor space in conventional delayed coking drums (col. 6, lines 20-25).

Janssen et al. (USP 4,455,219) teaches the circulation of coker heavy gas oil, or other liquids to quench the vapors from the coke drums (col. 4, lines 3-8, claim 7).

It would have been obvious then to further modify the coking processes of Shroeder et al., Zse et al., Grindstaff et al., Schlinger et al., or Hayashi et al. as suggested by Meyers et al. Scalliet et al., Bartilucci et al. Mallari and Janssen et al. by introducing the sludge, waste materials, hydrogen or coker gas oil during the quench cycle or prior thereto, for et least the self-evident benefit of disposing of environmentally hazardous waste materials, or increasing the amount of distillates produced (Mallari and Janssen et al.), or while still meeting the coke quality requirements.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 4,5, 21-23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 of U.S. Patent No. 6,168,709 in view of Meyers (USP 3917564), Scalliet (USP 6,056,882) or Bartilucci et al. (USP 4,874,505).

Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed to essentially the same coking process with the exception of the addition of agents which is disclosed in the secondary references as discussed above.

10. Claims 4-5, 21-23 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 23-33 of copending Application No. 09/763,282.

Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed to essentially the same coking process with the sole distinction being the differences in the materials injected, thus rendering the difference to one of scope rather than the substance of the invention.

This is a provisional obviousness-type double patenting rejection.

11. Claims 4-5, 21-23 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-44 of copending Application No. 09/556,132.

Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed to essentially the same coking process with the sole distinction being the differences in the materials injected, thus rendering the difference to one of scope rather than the substance of the invention.

This is a provisional obviousness-type double patenting rejection.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bekir L. YILDIRIM whose telephone number is (703) 308-3586. The examiner can normally be reached on 10:30-8:00 (alternating Mondays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (703) 308-6824. The fax phone

Art Unit: 1764

numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 872-9467 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0611.

BLY
July 25, 2003



Bekir L. Yildirim
Primary Examiner